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|---|---|
| 71. <i>Mnium affine</i> , var. <i>rugicum</i> , <i>Bland.</i> | 97. <i>Cladonia pyxidata</i> , (<i>Linn.</i>) <i>Fries.</i> |
| 72. " <i>rostratum</i> , <i>Schw.</i> | 98. " <i>furcata</i> , var. <i>racemosa</i> ,
<i>Hoff.</i> |
| 73. <i>Meersia Albrotnii</i> , ? | 99. <i>Cladonia ignota</i> ? |
| 74. <i>Bartramia</i> , aff., <i>calcareæ</i> . | 100. <i>Lecidea geographica</i> ? <i>Hoff.</i> |
| 75. <i>Conostomum boreale</i> , <i>Swartz.</i> | 101. <i>Umbilicaria hyperborea</i> ! <i>Hoff.</i> |
| 76. <i>Splachnum Wormskioldii</i> , <i>Brid.</i> | 102. <i>Ignota</i> " |
| 77. " <i>vasculosum</i> , <i>Linn.</i> | 103. <i>Verrucaria popularis</i> , <i>Floerk.</i> |
| 78. <i>Hypnum uncinatum</i> , <i>Hedw.</i> | 104. " <i>maura</i> , var. <i>striatula</i> ,
<i>Hoff.</i> |
| 79. " <i>aduncum</i> , <i>Linn.</i> | |
| 80. " <i>oligorrhizon</i> , <i>Brid. & Sch.</i> | |
| 81. " <i>nova species</i> ? | |

LICHENES.

BY THOS. P. JAMES.

And submitted to Ezra Michener, M.D.

82. *Alectoria bicolor*, (*Ehrh.*) *Nylander.*
 83. " *sulcata* ? (*Lev.*) *Nyl.*
 84. " *ochroleuca*, (*Ehrh.*) *Nyl.*
 85. *Lecanora ventosa*, *Ach.*
 86. *Neuropogon Taylori*, *Hook., Nyl.*
 87. *Platysma cucullata*, *Hoff.*
 88. " *nivalis*, *Ach.*
 89. *Plocadium elegans*, (*Ach.*) *Nyl.*
 90. *Parmelia saxatilis*, (*Linn.*) *Ach.*
 91. " *Borreri*, *Turner.*
 92. " *stygia*, (*Linn.*) *Ach.*
 93. " *conspersa* ? (*Ehrh.*) *Ach.*
 94. *Dactylina Arctica*, (*Rich.*) *Nyl.*
 95. *Stereocaulon denudatum*, *Floerk.*
 96. " *condensatum*, *Hoff.*

ALGÆ.

BY SAM'L. ASHMEAD.

105. *Fucus vesiculosus*, *Linn.*
 106. *Alaria esculenta*, *Grev.*
 107. *Ulva latissima*, *Linn.*
 108. *Laminaria phyllitis*, *Lam.*
 109. " *longicurris*, *Pylæie.*
 110. *Laminaria fascia*, *Ag.*
 111. " *saccharina* ? *Lam.*
 112. *Rhodymenia interrupta*, *Grev.*
 113. *Enteromorpha compressa*, *Grev.*
 114. *Soliera chordalis*, *Ag.*
 115. *Cladophora arcta*, *Dill.*
 116. *Bryopsis plumosus*, *Ag.*
 117. *Desmarestia aculeata*, *Lam.*
 118. *Chaetomorpha littorea*, *Haw.*
 119. *Ectocarpus* ?
 120. *Ignota.*

Additions to the Catalogue of Stars which have Changed their Colors.

BY JACOB ENNIS.

I beg leave to add the following continuation to the Catalogue of six stars which have changed their colors, recently presented as a verbal communication :

7. *Procyon*. In 1850 Humboldt classed *Procyon* among the yellow stars : *Cosmos*, Vol. 3, p. 182. In a verbal communication to this Academy, Feb. 17th, 1863, I announced that this star is now very decidedly blue ; and in this all to whom I have referred the color agree without the least hesitation.

8. *Rigel*. This star is classed among the white stars by Donati, in a Memoir dated August, 1860, and published in the *Annals of the Museum at Florence* in 1862. It is now decidedly blue. During the past two months it has been observed by myself and some friends to be one of the most deeply-colored of all the stars now visible in this latitude.

9. *Alpha Lyrae*, or *Vega*. Donati, in the Memoir just named, classes *Vega* among the white stars. Humboldt, in 1850, — *Cosmos*, Vol. 3, p. 183, — says, "the light of *Alpha Lyrae* is bluish." To myself it now appears pale blue, very much like *Capella*.

10. *Castor*. Donati, in 1860, classed *Castor* among the yellow stars. Humboldt, in 1850, says, "Castor is a greenish star." — *Cosmos*, Vol. 3, p. 177. It appears to me greenish now, — March, 1863.

There is a close cluster of more than a hundred stars, known as *Kappa* [Mar.

Crucis, in the Southern hemisphere, and when seen through a telescope, the very varied colors of its individual stars give it, according to Sir John Herschel, "the effect of a superb piece of fancy jewelry." During his residence at the Cape of Good Hope, he made a drawing or map of this group, and stated carefully the colors of eight of its most conspicuously-colored stars. Just a quarter of a century later, F. Abbot, Esq., in a communication to the Royal Astronomical Society in England, dated, Private Observatory, Hobart Town, May, 1862, describes how this piece of jewelry has changed. Six of these eight stars have now different colors. The changes, according to him, are as follows:

11. Gamma kappa crucis: Changed from greenish white to bluish purple. There is an error in Mr. Abbot's communication, as printed in the Monthly Notices of the Royal Astronomical Society. The name of this star is there printed nu, instead of Gamma. Sir John's list has no nu.

12. Delta kappa crucis: has changed from green to pale cobalt.

13. Epsilon kappa crucis: has changed from red to Indian red.

14. Zeta kappa crucis: has changed from green to ultra-marine.

15. Phi kappa crucis: has changed from blue green to emerald green.

16. Alpha² kappa crucis: has changed from ruddy to the similar color of all the small stars of that magnitude. "The smaller stars, from the 10th to the 14th magnitude, are generalized, and all partake of nearly the same color,—Prussian blue,—some with a little more or less tint of red or green mixed with the blue."

Arago says that certain of the double stars designated by Sir William Herschel as having a yellow color, are at present, according to Struve, orange and red. Others, which according to Herschel shone with a perfectly white light, exhibit, according to recent observations, a golden-yellow, red, and even greenish-blue. These will be added to this catalogue in due time.

Sirius, Procyon, Capella. The Memoir of Donati brings down the former colors of these stars to a much later date than any authority I had found previous to my communications of Feb. 10th and 17th. In August, 1860, he still classes the two former among the white stars. A very few months afterwards, Sirius was observed by Dr. Wilcocks to be changed. At the same date, also, Donati classes Capella among the yellow stars, but, by the authority quoted in the Proceedings of Feb. 10th, it was blue in September, 1859! and had been so I know not how long. After making due allowances for this discrepancy, if such it be, these are strikingly sudden changes, but not more impressive than those in the cluster Kappa Crucis, where six out of eight stars had changed their colors in a quarter of a century. Beta Ursa Minoris has often vibrated between yellow and red. The very reliable German observer, Heis, wrote: "I have had frequent opportunities of convincing myself that the color of this star is not always equally red; at times it is more or less yellow, at others most decidedly red." Captain Berard "had for some years seen Alpha Crucis growing red." The temporary star of 1572 in a few months passed through the colors white, yellow, red, another shade of red, and again a duller white. The suddenness and the variety of the changes a star may undergo, are no reasons against their reality. But all this shows the need of caution on the part of the observer, and how a writer should not publish the color of a star as existing at any date, which color may depend altogether on observations of some prior date. Discrepancies must in this way occur, and in this way we may perhaps account for a discrepancy in Humboldt's Cosmos, Vol. 3, p. 181, where, apparently using an old catalogue, he classes Vega among the white stars, but on p. 183, where he individualizes to prove the existence of blue stars, he says, "the light of Alpha Lyrae is bluish." The discrepancy just shown between Kearney and Donati may, perhaps, be similarly explained. A discrepancy of a different kind appears in the Proceedings of the 10th of February of this Academy. Dr. Wilcocks, in announcing the change of Sirius, gave the present color as violet, but previous to the next 1863.]

meeting, Feb. 17th, he convinced himself that his impression was wrong, and that the present real color of Sirius is green; and he obtained consent that the Minutes, when printed, should be altered accordingly; but by some oversight this alteration was not made. In denominating Sirius purple in October last, I dissented, for it appeared to me plainly green. The three successive, undisputed colors of Sirius therefore are red, white and green. There is special need of attending to discrepancies in the beginning of this catalogue, both as to *color* and to *dates*. This is the only way to insure progress.

It is to me an impressive fact that so many conspicuous stars now nightly appear blue or green; especially as the first blue stars were mentioned by Mariotte, so lately as in 1686;—before him, no departure from white was named but red, with the exception of the yellow in the temporary star of 1572. Capella, Bellatrix, Rigel, Procyon, Vega, Beta Libræ are blue; all deeply so except Capella and Vega. Sirius is conspicuously green, and Castor slightly green, though I sometimes doubt the greenness of the latter. When a star is not of the first magnitude, or when its departure from white is not very decided, a long fixedness of the eye upon it is necessary, and a careful exclusion of artificial lights. At least, this is my experience. It has occurred to myself, and been suggested by others, that perhaps this blueness of so many large stars now in view, and greenness, which is a modification of blue, may be owing to some special atmospheric cause. For many months the air has been unusually damp. But this cannot be the cause of these colors, for Aldebaran Betelgeuse and the planet Mars are in the midst or near vicinity of some of these blue and green stars, and preserve their ordinary redness. Pollux, however, in the same general neighborhood, seems hardly entitled to be called a red star. From the fact that it was classed among the six decidedly red stars by the ancients, I regard it as changed, but desire further time before announcing the change in the catalogue. Humboldt calls it merely “reddish.”

I would not be premature in speculating on the laws or causes of these changes, but must remark that the change of Sirius, from its ancient red to white, and now to green, is all in the same direction, namely: a *relative* diminution of the red. The three primary colors, red, yellow and blue, with an excess of red, will give a red star; take away the excess of red and the star will be white; take away still more of the red and it will be green,—that is, a combination of the remaining yellow and blue. The three colors of Sirius, therefore, the ancient red, the modern white and the recent green, may possibly be due to the operation of a single cause.

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Communication, March 24th.

Mr. Cassin read the following interesting extracts from a letter to Prof. R. Dunglison, of this city, from Dr. James A. Grant, of Ottawa city, Canada, dated Feb. 10th, 1863, relating to the Willow Grouse, or Ptarmigan, *Lagopus albus*: “During the present winter, the Ptarmigan or White Grouse has been observed in large numbers at the head waters of the Gatineau river, (a tributary of the Ottawa river,) distant from Ottawa city about 120 miles. In that locality, lumberers are constantly engaged, who have, this season, procured these birds in considerable numbers, a very unusual circumstance, as years frequently elapse without one being observed. This bird seems to be guided in its migration by peculiarities of climate, and is only seen in this particular locality when the season is very cold. Since the year 1844 it has not been observed by the lumberers until the present season, and it seems that nothing short of excessive arctic cold will bring it from its more northern abode.”

“It is stated by Buffon that the Ptarmigan avoids the solar heat, and prefers the biting frost on the tops of mountains. These peculiarities I have also observed here. This bird appears to enjoy the soft snow on the hill sides,

[April,

and frequently makes holes in it and thus shelters itself during the night. In this position it is occasionally found frozen in by a superficial crust of ice which formed during the night, caused by the fall of rain, and owing to a sudden change of temperature, which is not an unusual circumstance even in these northern localities."

"Owing to their absence in a great measure from the inhabited northern localities, these birds do not possess that degree of fear which is observed in other members of the Grouse family, in consequence of which they are easily shot or caught in snares. They are said to pair at the same time as the red Grouse. The female lays 10 to 12 eggs, which are white and marked with brown spots, and which are deposited on the ground, no nest being provided. Having examined carefully the digestive organs of this bird, I found the principal contents to be small twigs and buds of the Birch tree, mixed with small particles of sand. These twigs were nicely divided into pieces, varying from one-eighth to one-quarter of an inch in length, and in examining the beak it will be observed that it possesses considerable strength, and from its peculiar formation is beautifully adapted to the division of these small shoots or twigs, from which this bird appears to derive the greater part of its nourishment. I have much pleasure in sending to you specimens of both sexes for the Academy of Natural Sciences."

April 7th.

The President, MR. LEA, in the Chair.

Twenty members present.

The following were offered for publication :

Descriptions of new Squamata. By E. D. Cope.

Descriptions of new species of Vireonidæ, &c. By Geo. N. Lawrence.

Descriptions of new species of Pedipalpi. By Dr. H. C. Wood, Jr.

April 14th.

The President, MR. LEA, in the Chair.

Twenty-seven members present.

April 21st.

The President, MR. LEA, in the Chair.

Twenty-two members present.

April 28th.

The President, MR. LEA, in the Chair.

Nineteen members present.

On the report of the respective Committees, the following were ordered to be published in the Proceedings:

1863.]